A CHECK LIST OF COLOMBIAN AND PRESUMED COLOMBIAN CACTACEAE

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This check-list has strictly practical purposes. It was written to present in a convenient form a selection of published species, which all students of Colombian Cactaceae cannot afford to disregard while identifying old entities or publishing new ones.

We know at present very little of this family in Colombia, so little as a matter of fact that no one may forecast what is to be learned in the future. In a sketchy account of the cactoid flora of Central Colombia (in Monatsschr. Kakteenk. 17: 17-20. 1907), Wercklé comments upon the paucity of cacti in this region, remarking the barreness in species of regions like the ranges of Fusagasugá and the Rio Sumapaz which appear, on their face, to be eminently suited to the growth of such succulents. On the other hand, Werdermann (in Monatsschr. Deutsch. Kakteengesell. 4: 1-6. 1932) points out that the presence of cacti like *Frailea colombiana, Malacocarpus Vorwerkianus, Mammillaria bogotensis* at various localities in Colombia is significant, indeed upsetting the present state of our knowledge of the distribution of the Cactaceae. Werdermann is quick in emphasizing the fact that the nearest species of *Frailea* and *Malacocarpus* are to be found in Bolivia and southward, the Colombian representatives of these genera being surprisingly out of range. Were the cactoid flora of Colombia poor indeed, it would still rate as unique on account of the strange admixture of its genera. The study of quaternary glaciations in Colombia, only recently contributed by Oppenheim (in Rev. Acad. Colomb. Cienc. IV, 13: 70-81. 1940) has ascertained the existence of terminal moraines as low as 3400 m. alt. at the Páramo de Sumapaz, which suggests a reason why this region does not seem at a glance to be so rich in cacti as similar ranges in Mexico and other Central American countries. The presence of *Malacocarpus* in the vicinity of Sogamoso at an altitude of nearly 1200 m. indicates that this is a relicgenus in this locality and that the Andean uplift taking place between the Miocene and the Pleistocene, with an attending glaciation, has probably reduced the wealth of the ancient cactoid flora of these regions. To such changes and their influence may also be due the controversial status of forms like the Northern Peruvian *Echinocactus islayensis* Foerst. and *E. myriacanthus* Vaup., which various authors have placed under the genera *Malacocarpus, Islaya, Parodia* and *Arequipa*. There is evidently much still to be learned about the facts noticed by Wercklé and Werdermann.

Wercklé was a keen student of Cactaceae and a diligent observer, but he could certainly not hope to find such low-lying plants as *Frailea, Mammillaria* and *Malacocarpus* in the course of a casual excursion. North-eastern Mexico has been trodden upon by scientific and commercial collectors for almost a century, yet it has yielded only in a comparatively recent past such outstanding novelties as *Neogomesia, Aztekium* and *Obregonia*. It is true that the phytogeography of Colombia may be far less rich in Cactaceae than that of Mexico, and that parallels drawn between these two countries may prove misleading. Yet, it is a reasonable hope to anticipate a fair quota of novelties from a study of the Cactaceae diligently made in Colombia. It is fortunate indeed that this study is to be entrusted to the trained collectors and sagacious botanists of the Instituto de Ciencias Naturales of Bogotá. Altogether too much has been done in the past by commercially minded explorers, with the result that an incredible confusion has been injected in the classification of the family. A glance at the present status of *Pilocereus* in Colombia will satisfy any impartial observer that the botany of this Republic has gained very little by Backeberg's collections. It is essential, in my opinion, that careful scientific records should be inmediately taken, and that all the types should be preserved in the Herbario Nacional Colombiano. Anything less will damage the cause of Colombian botany.

Considering that we know practically nothing as yet of the Cactaceae of Colombia, it seems unwise to restrict this list to the handful of species which have been so far reported from that country. At the risk of overextending the scope of this preliminary work, I have included in it the Cactaceae of Costa Rica, Panamá, Venezuela, Ecuador, Northern Peru with the addition of those of the Galápagos Islands and of a few of Western Brazil. Many of these plants may never be found in Colombia, but we cannot forget that *Jasminocereus*, for instance, supposedly endemic in the Galápagos Islands, might appear on the Peruvian-Ecuadorean boundary.

In arranging a check-list of this nature many are the difficulties, the greatest being to determine what is to be accepted or rejected. That this list will eventually prove imperfect is undeniable, for no work of compilation is ever sounder than its sources, and the compiler himself is bound to err on his own account. After deliberation, I have decided to accept as my main, almost exclusive sources *The Cactaceae* of Britton & Rose and the *Kaktus-ABC* of Backeberg & Knuth. The former, with its good qualities and shortcomings, has permanent place in the lore of cactology, and the latter is a handy compilation with many new records and much novel nomenclature. These two sources cover fairly well the regions which interest my work, and to upset them with additions and corrections has not proved practical at this stage of investigation. The *Initiae Florae Venezuelensis* of Knuth (in Fedde Repert. Beih. 43. 1927), which are inmediately suggested as the best material for a listing of the Cactaceae of Venezuela, contain nomenclature which is not current, and records based upon misdeterminations which Knuth — be this clear — merely gathered upon specimens in herbarium which he could not critically study. *Opuntia leptocaulis,* which Knuth cites for the Island of Margarita off the coast of Venezuela, is actually based upon a specimen of Coulter from Mexico (see De Candolle in Mém. Mus. París 17: 118. 1828). Likewise, *Pereskia opuntiaeflora* is not a Venezuelan plant but a Mexican doubtful species. Pittier's certification of *Opuntia Schumannii* as common on the Venezuelan sea-shore (Pl. Us. Venez. 390. 1926) is not acceptable because the plant he describes is plainly at variance with the original illustration of that species and with Britton & Rose's earlier identification of a Colombian plant as *O. Schumannii,* this plant agreeing with the original diagnosis and figure. I doubt that convenience would be served by including in this list binomials that are of questionable status, granted that they are interesting as synonymy.

A discussion of the genera of the Cactaceae has no place in this work, but I state my belief that the generic units of Britton & Rose, though not always satisfactory, are the best available in the present state of our knowledge. Werdermann, a stout exponent of traditionalism in the classification of the Cactaceae and a conservative taxonomist throughout, has been forced to the ultimate conclusion (Brasil. Säulenkakt. 84-85. 1933) that the genera of Schumann, Vaupel and ultra-conservative authors can no longer be maintained, this for the plain reason that the concepts of these authors do not fit present learning. In a recent elaboration of the Cactaceae of the Galápagos Islands, Howell has reintroduced the classic concept, so called, of *Cereus* (in Proc. Calif. Acad. Sc., 4 ser., 31 (5): 52-54, 1933), being followed in this by Svenson (in Contr. Brooklyn Bot. Gard. 69: 246-247. 1935), and has rejected *Jasminocereus* and *Brachycereus* of Britton & Rose. I maintain these two genera. The old concept of *Cereus* was factually and finally liquidated by Berger at the beginning of this century (in Rept. Missouri Bot. Gard. 16: 57-86. 1905), who proved that *Cereus* in the traditional sense consists of a number of different subgenera. A glance at the characters of the flower and fruit of these subgenera, such as Berger illustrates them, is sufficient in my considerate opinion, to show that they cannot all endure under a single generic name, unless it is believed that the name *Cereus* belongs to every cactus that tends to grow in a columnar form. The truths of classification are borne out only in time, and that classification ultimately prevails which answers common sense and convenience. The work of Berger in 1905 endures to this day as basically correct, and the decision of Riccobono and Britton & Rose that most of the subgenera of Berger are genera has finally been accepted in 1933 by Werdermann. This, I believe, is the best answer that can be returned to opinions still favoring the retention of "classical" or "broad" genera. Naturally, much will be left to the tastes of the individual botanist and to his preferences for certain smaller or larger units, and controversy is bound to last about part of that which Britton & Rose found advisable to accept. It is plain, on the other hand, that no return is possible to the classification of Schumann and Vaupel.

In preparing this list I have given almost no thought to nomenclature. The science of nomenclature has fallen into neglect among us, and this is certainly not the place to debate its tenets. I accept, consequently, the names that are current, leaving it to their users to probe and investigate them. Were I to follow Howell in his treatment of *Jasminocereus galapagensis* and *Brachycereus Thouarsii,* I should effect new combinations or offer as an alternative an ample discussion of nomenclature. Neither one is possible here, and new combinations are certainly not in order, appearance to the contrary notwithstanding.

In conclusion: this list follows Britton & Rose in the matter of genera, with modifications of detail, consisting of the substitution of *Pilocereus* for *Cephalocereus,* which I have previously discussed (see Croizat in Caldasia II, 8: 251-254. 1943). The species are those of Britton & Rose and Backeberg & Knuth. Occasional notes are provided to elucidate points that have practical value for inmediate taxonomic work.

The range covered by this list is: Costa Rica, Panama, Colombia, Western Venezuela, Ecuador (including the Galápagos Islands), a limited section of Northern Peru, with occasional additions. Species widely cultivated are added, even though they are not recorded in these ranges.

The abbreviations are to be read as follows: BR means Britton & Rose, *The Cactaceae,* the volume and page being added (Vol. 1, 1919; Vol. 2, 1920; Vol. 3, 1922; Vol. 4, 1923); BK refers to Backeberg & Knuth, *Kaktus-ABC* 1935. The type-locality is given in every case, mostly on the faith of Britton & Rose. Whenever Britton & Rose and Backeberg & Knuth disagree as to the genus, the generic name used by the latter is given in parenthesis. The order of the species is strictly alphabetical, and the sequence of the genera follows that of Britton & Rose. The names of the specific entities already recorded from Colombia are printed in **bold** type.

Pereskia Miller

The spelling *Pereskia* is correct. See Croizat in Desert Plant Life 15: 76-77. July 8, 1943. It has been upheld in the Linnean and pre-Linnean period throughout, and Plumier himself, who remarks (Nov. Plant. Amer. Gen. 35. 1703) that the genus was meant to honor "D. Nicolaus Fabricius Peireskius", wrote *Pereskia* as the generic name. Both Peireskius and Pereskius are correct latinizations of the south-French family name Peiresc, but the latter only appears to have been used — as stated — in the original spellings of *Pereskia.* Such spellings as *Peirescia* and *Perescia* are based on the mistaken belief that Plumier, Dillenius, Linnaeus and Miller used *Peiresc* as the root of the generic name. They did not, for the name they used or proposed is grounded in the latinized form *Pereskius.*

1. *P. aculeata* Mill. Gard. Dict. ed. 8. 1768; BR 1: 10; BK 95. Type-locality: Tropical America, widespread in cultivation.
2. **P. Bleo** (HBK.) DC. Prodr. 3: 475. 1828; BR 1: 17; BK 97 (*Rhodocactus*) Type-locality: "Badillas" = Badillo, Magdalena River, Colombia).

3. **P. colombiana** BR 1: 17; BK 97 (*Rhodocactus*). Type-locality: Santa Marta, Colombia.
4. *P. grandifolia* Haw. Suppl. Pl. Succ. 85: 1819; BR 1: 19; BK 97 (*Rhodocactus*). Type-locality: Brazil, widespread in cultivation.
5. *P. Guamacho* Web. Dict. Hort. Bois 938. 1898; BR 1: 16; BK 97 (*Rhodocactus*). Type-locality: Basin of the Orinoco, Venezuela.
6. P. *Humboldtii* BR 1: 21; BK 97 (*Rhodocactus horridus* (HBK) Backeb. & Knuth). Type-locality: "Jaen de Bracamoros" (?Cajamarca, Perú).
7. *P. nicoyana* Web. Bull. Mus. Hist. Nat. Paris 8: 468. 1902; BR 1: 13; BK 97 (*Rhodocacatus*). Type-locality: Gulf of Nicoya, Costa Rica.

Nopalea Salm-Dyck

1. *N. cochenillifera* (L.) S.-D. Cact. Hort. Dyck 64. 1850; BR 1: 34; BK 147. Type-locality: Jamaica and Tropical America, widespread in cultivation.
2. *N. dejecta* (S.-D.) S.-D. Cact. Hort. Dyck. 64. 1850; BR 1: 37; BK 149. Type-locality: Cuba, widespread in cultivation.

Opuntia Miller

A large group of species in this genus (*Opuntia* subg. *Tephrocactus* BR 1: 84-99; *Tephrocactus* BK 104-114), characteristic of the higher Andean ranges, is not recorded here because it has so far been reported only from Peru to Chile and Argentina. This group, numbering between twenty and forty species, is likely to occur in the Andean ranges of Colombia.

1. *O. aequatorialis* BR 1: 116, 219; BK 130. Type-locality: Chimborazo, Ecuador.
2. **O. bella** BR 1: 111; BK 129. Type-locality: Venticas del Dagua, Western Colombia.
3. *O. Boldinghii* BR 1: 155; BK 140. Type-locality: Curaçao; Venezuela.
4. *O. Bonplandii* (HBK) Web. Dict. Hort. Bois 894, 1898; BR 1: 168, 223; BK 141. Type-locality: Cuenca, Ecuador.
5. *O. caribaea* BR 1: 49; BK 123 (*Cylindropuntia*). Type-locality: Santo Domingo; northern coast of Venezuela.

6. *O. caracasana* S.-D. Cact. Hort. Dyck 238. 1850; BR 1; 116, 219; BK 145. Type-locality: near Caracas, Venezuela.

7. *O. crassa* Haw. Suppl. Pl. Succ. 81. 1819; BR 1: 178; BK 136. Type-locality: unknown, locally cultivated in Tropical America.

8. *O. cylindrica* (Lam.) DC. Prodr. 3: 471. 1828; BR 1: 77; BK 120 (*Cylindropuntia*). Type-locality: highlands of Peru and Ecuador.

9. *O. depauperata* BR 1: 101, 216; BK 127. Type-locality: Caracas, Venezuela.

10. *O. Dillenii* (Ker-Gawl.) Haw. Suppl. Pl. Succ. 79. 1819; BR 1: 162; BK 140. Type-locality: unknown, occurs in northern South America.

11. *O. Dobbieana* BR 1: 187. 225; BK 137. Type-locality: Chimborazo, Ecuador.

12. *O. Echios* Howell Proc. Calif. Acad. Sc., 4 ser., 31 (5): 49-51. 1933; BK 136. Type-locality: Galápagos Islands.

13. **O. elatior** Mill. Gard. Dict., ed. 8, Nº 4. 1768; BR 1; 153; BK 139. Type-locality: unknown, common in Venezuela, Colombia and Panama.

14. *O. exaltata* Berg. Hort. Mortol. 410. 1912; BR 1; 76; BK 120 (*Cylindropuntia*). Type-locality: Ecuador to Northern Chile.

15. *O. Ficus-indica* (L.) Mill. Gard. Dict., ed. 8, Nº. 2. 1768; BR 1: 177; BK 136. Type-locality: unknown, widespread in Tropical America.

16. *O. galapageia* Hensl. Mag. Zool. Bot. 1: 467. 1837; BR 1: 150 (including as synonyms *O. Helleri* Schum. and *O. insularis* Stew., accpeted as valid species by Howell, Proc. Calif. Acad. Sc., 4 ser., 31 (5): 44. 1933); BK 136. Type-locality: Galápagos Islands.

17. *O. lanceolata* Haw. Syn. Pl. Succ. 192. 1812; BR 1: 179; BK 136 (as *O. elongata*). Type-locality: unknown, cultivated in South America.

18. *O. maxima* Mill. Gard. Dict., ed. 8, Nº 5. 1768; BR 1: 180; BK 136 (as *O. decumana*). Type-locality: unknown, cultivated in Tropical America.

19. *O. megasperma* Howell Proc. Calif. Acad. Sc., 4 ser., 31 (5); 46-48. 1933; BK 136. Type-locality: Galapagos Islands.

20. **O. Pennellii** BR 1: 115, 219; BK 130. Type-locality: Magangué, Depto. Bolívar, Colombia.

21. *O. pestifer* BR 1: 103, 217; BK 129. Type-locality: Sondorillo and Huancabamba, northern Peru.

22. **O. Pittieri** BR 1: 188; BK 137. Type-locality: Venticas del Dagua, Western Colombia.
23. *O. pusilla* Haw. Syn. Pl. Succ. 195. 1812; BR 1: 105; BK 131. Type-locality: unknown, possibly South America.
24 *O. quitensis* Web. Dict. Hort. Bois 894. 1898; BR 1: 154; BK 144. Type-locality: near Quito, Ecuador.
25. *O. saxicola* Howell Proc. Calif. Acad. Sc., 4 ser., 31 (5): 45. 1933; BK 136. Type-locality: Galápagos Islands.
26. *O. Soederstromiana* BR 1: 154, 221; BK 139. Type-locality: San Antonio, Quito, Ecuador.
27. **O. Schumannii** Web. in Berg. Gard. Chron. III, 35: 34, fig. 1904; BR 1: 155 pl. xxvii fig. 1-2; BK 139. Type-locality: unknown but certified for Colombia (see Croizat in Caldasia II, 7: 135. 1943).
28. *O. tunicata* (Lehm.) Link & Otto in Pfeiff. En. Cact. 170. 1837; BR 1: 65; BK 126 (*Cylindropuntia*). Type-locality: Mexico to Chile.
29. *O. Wentiana* BR 1: 116; BK 130. Type-locality: Curaçao, Venezuela.
30. *O. zacana* Howell Proc. Calif. Acad. Sc., 4 ser, 31 (5): 48. 1933; BK 136. Type-locality: Galápagos Islands.

Cereus Miller

(*sensu* Britton & Rose, Werdermann 1933! nec alior.)

With the exception of *C. trigonodendron,* the species of this genus are not represented in the mainland covered by this list. Some of them, however, will be found either cultivated or escaped. For the species variously identified by Backeberg as *Cereus* or *Pilocereus,* see under *Pilocereus.*

1. *C. caesius* S.-D. in Pfeiff. En. Cact. 89. 1837; BR 2: 15; BK 180. Type-locality: unknown, South America, possibly Brazil.
2. *C. hexagonus* (L.) Mill. Gard. Dict., ed. 8, Nº 1. 1768; BR 2: 4; BK 181. Type-locality: Dutch Guiana, but cultivated throughout the tropics.
3. *C. Jamacaru* DC. Prodr. 3: 467. 1828; BR 2: 8; BK 181. Type-locality: Brazil, cultivated in the West Indies, possibly elsewhere in the tropics.
4. *C. margaritensis* Johnst. Proc. Amer. Acad. Sc. 40: 693. 1905; BR 2: 18; BK 182. Type-locality: Margarita Island, Venezuela.

5. *C. obtusus* Haw. Rev. Pl. Succ. 70. 1821; BR 2: 15; BK 182. Type-locality: unknown, South America, possibly Brazil.
6. *C. peruvianus* (L.) Mill. Gard. Dict., ed. 8, Nº 4. 1768; BR 2: 17; BK 182. Type-locality: unknown, widely cultivated in the tropics.
7. *C. repandus* (L.) Mill. Gard. Dict., ed. 8, Nº 5, 1768; BR 2: 17; BK (under *Harrisia gracilis* 309, and *Pilocereus albispinus* 326). Type-locality: Tropical America; *fide* Britton & Rose in Curaçao, Aruba, Bonaire.
8. *C. trigonodendron* Schum. Engl. Bot. Jahrb. 40: 413. 1908; BR 4: 267; BK ? (omitted). Type-locality: Loreto, Perú.

Monvillea Britton & Rose

1. *M. amazonica* (Schum.) BR 2: 24; BK ? (omitted). Type-locality: Loreto, Perú.
2. *M. diffusa* BR 2: 24; BK 183. Type-locality: Valley of Catamayo, Southern Peru.
3. *M. maritima* BR 2: 24; BK 184. Type-locality: Coast of southern Ecuador.
4. *M. Smithiana* (Britt. & Rose) Backeb. in BK 184; BR 2: 37 (*Cephalocereus*). Type-locality: Puerto Cabello, Venezuela.

Pilocereus Lemaire emend., *sensu* K. Schumann
Nom. gen. conserv. prop., Werdermann 1937
(*Cereus* auct. mult.; *Cephalocereus* Britt. & Rose p. max. p.).

The involved status of this genus has been discussed in a separate contribution (Croizat in Caldasia II, 8: 251-257. 1943). At various times and places Backeberg has published species which he has referred to *Pilocereus* and *Cereus,* and by certain authors (e.g.: Borg, Cacti 106. 1937, listing *"Cephalocereus remolinensis* Backbg.") have been further confused. All the species entered here and known to Britton & Rose were treated by these authors under *Cephalocereus.* Backeberg has further split *Pilocereus* into a number of lesser genera, apparently treating as *Subpilocereus* the species which he originally placed under *Pilocereus* "Raekke" *Oblongicarpi,* (see Marshall & Bock, Cactaceae 72. 1942). Since it proves impossible to take care of this controversial nomenclature within the limits of a check-list, only those species are cited which Backeberg & Knuth accept under *Pilocereus* in the Kaktus-ABC 1935. *Pilocereus Backebergii* Weing., BK 329, is a synonym of P. *Moritzianus* Lem., and *P. Fricii* Backeb., **BK 326,** of *P. Russellianus* Ruempl.

1. **P. atroviridis** BK 327. Type-locality: northern coast of Colombia.
2. *P. claroviridis* BK 330. Type-locality: Caracas, Venezuela.
3. **P. colombianus** (Britt. & Rose) Backeb.; BR 2: 55 (*Cephalocereus*); BK 330. Type-locality: Venticas del Dagua, Western Colombia.
4. **P. horrispinus** BK 327. Type-locality: Puerto Colombia, Colombia.
5. *P. Moritzianus* Lem. Ill. Hort. 13: under pl. 469. 1866; BR 2: 41; BK 332. Type-locality: La Guayra, Venezuela.
6. **P. remolinensis** BK 327. Type-locality: Remolino (Depto. del Magdalena), Colombia.
7. *P. Russellianus* Ruempl. in Foerst. Handb. Cact., ed. 2, 682. 1855; BR 2: 33; BK 327. Type-locality: La Guayra, Venezuela.
8. *P. Tweedyanus* (Britt. & Rose) Backeb.; BR 2: 54 (*Cephalocereus*); BK 334. Type-locality: El Oro, Ecuador.

Espostoa Britton & Rose

1. *E. lanata* (HBK.) Britt. & Rose; BR 2: 61; BK 340. Type locality: Rio Aranza and Huancabamba, Ecuador.

Lemaireocereus Britton & Rose

1. *L. Aragonii* (Web.) BR 2: 92; BK 306. Type-locality: Western Costa Rica.
2. *L. Cartwrightianus* BR 2: 100; BK 176 (*Armatocereus*). Type-locality: near Guayaquil, Ecuador.
3. *L. deficiens* (Otto & Dietr.) BR 2: 94; BK 307. Type-locality: Caracas, Venezuela.
4. *L. Godingianus* BR 2: 91; BK 306. Type-locality: Huigra, Ecuador.
5. *L. griseus* (Haw.) Britt. & Rose Contr. U. S. Nat. Herb. 12: 425. 1909; BR 2: 87; BK 306. Type-locality: South America, northern coast of Venezuela.
6. **L. humilis** BR 2: 101; BK 307. Type-locality: Venticas del Dagua, Western Colombia.
7. *L. laetus* (HBK.) Britt. & Rose Jour. N. Y. Bot. Gard. 20: 157. 1919; BR 2: 99; BK 176 (*Armatocereus*). Type-locality: Sondorillo, Perú.

Nyctocereus Britton & Rose

Britton & Rose speak of *Cereus Kalbreyerianus* Wercklé (BR 2: 118) as follows: "*Cereus kalbreyerianus* Wercklé (Monatsschr. Kakteenk. 17: 38. 1907) is known only from its flowers, which, from the description, closely resemble those of *N. serpentinus* and it is said to resemble this species in habit. It was found near Bogotá, Colombia". This statement is not quite accurate; Wercklé briefly describes the vegetative characters of this plant ("*Cereus*, sehr ähnlich dem *C. serpentinus*") (Monatsschr. Kakteenk. 17: 17. 1907), and further data, if brief ones only, are contributed by Weingart (*op. cit.* 39). The type-locality is definitely known: Cundinamarca, Rio Sumapaz, at an altitude of nearly 1200 meters. The seeds are said by Wercklé (*op. cit.* 38) to be exceedingly numerous, which certainly does not agree with Berger's note, cited by Britton & Rose, that in *N. serpentinus* the seeds are the largest in the cereoid group and only a few are produced in each fruit. Backeberg & Knuth do not mention *C. Kalbreyerianus* at all. I list it here as distinct from *N. serpentinus.*

1. **Nyctocereus Kalbreyerianus** (Wercklé) Croizat, comb. nov. (*Cereus Kalbreyerianus* Wercklé, Monatsschr. Kakteenk. 17: 38. 1907). Type-locality: Cundinamarca, Río Sumapaz, ca. 1200 m., Colombia.
2. *N. serpentinus* (Lag. & Rodr.) Britt. & Rose Contr. U. S. Nat. Herb. 12: 423. 1909; BR 2: 118; BK 308. Type-locality: unknown, widely cultivated.

Brachycereus Britton & Rose

Brachycereus nesioticus (Schum.) Backeb. is superfluous. Even if it be true — as pointed out by Howell, Proc. Calif. Acad. Sc., 4 ser., 31 (5): 53. 1933 — that Britton & Rose misunderstood the characters of *Cereus Thouarsii* Web., the name *Brachycereus Thouarsii* stands under an amended description (see International Rules of Botanical Nomenclature, 1935, Art. 54).

1. *B. Thouarsii* (Web.) BR 2: 120; BK 176 (*B. nesioticus*). Type-locality: Galápagos.

Acanthocereus Britton & Rose

Acanthocereus colombianus Britt. & Rose has been reduced to synonymy under *A. Pitajaya* (Jacq.) Dugand ex Croizat (in Caldasia II, 7: 135-138. 1943).

1. *A. pentagonus* (L.) Britt. & Rose Contr. U. S. Nat. Herb. 12: **432.** 1909; BR 2: 123; BK 302. Type-locality: unknown, widespread in the Caribbean (typically restricted to S. E. Texas, see Croizat, *op. cit.* 117-122, 138).
2. **A. Pitajaya** (Jacq.) Dugand ex Croiz. Caldasia II, 7: 135. **1943;** BR 2: 122 (*A. colombianus*); BK 302 (*A. colombianus*). Type-locality: Manga Island, Cartagena, Colombia (see foot-note in Caldasia II, 7: 138. 1943).

Heliocereus Britton & Rose

1. *H. speciosus* (Cav.) Britt. & Rose Contr. U. S. Nat. Herb. 12: **434.** 1909; BR 2: 128; BK 310. Type-locality: unknown, widely cultivated.

Trichocereus Riccobono

1. *T. Pachanoi* BR 2; 134; BK 203. Type-locality: Cuenca, Ecuador.

Jasminocereus Britton & Rose

Backeberg & Knuth, 210-211, voice the belief that *Cereus microspermus* Werderm. & Backeb. (Neue Kakt. 80. 1931; Fedde Repert. **30:** 63. 1932. Type-locality: Canchaque near Huancabamba — often spelled Guanchabamba by older authors —, eastern Piura, Northern Peru) and *C. chlorocarpus* HBK. (Nov. Gen. & Sp. 4: 67 (54 folio). 1823. Type-locality: near Huancabamba (Guancabamba) and Sondorillo, eastern Piura or Cajamarca, Northern Peru; *nom. vulg.* "Piscol verde") may belong to *Jasminocereus*. All these plants should be carefully compared with *Borzicactus, Haageocereus, Espostoa* and *Lemaireocereus*.

1. *J. galapagensis* (Web.) BR 2: 146; BK 210. Type-locality: Galápagos Islands.

Harrisia Britton

1. *H. platygona* (Otto) BR 2: 156; BK 178 (*Eriocereus*). Type-locality: unknown, possibly South America.

Borzicactus Riccobono

The position of this and related groups is controversial. Species of *Haageocereus* Backeb. (*Binghamia* Britt. & Rose; see Croizat in Cactus Succ. Jour. 14: 126-128, 145-148. 1942) are known in Northern Peru which might occur in Ecuador and northward.

1. *B. Humboldtii* (HBK.) BR 2: 163 BK 197 (*Binghamia*). Type-locality: Sondorillo and San Felipe, N. Peru.
2. *B. icosagonus* (HBK.) BR 2: 160; BK 197 (*Binghamia*). Type-locality: Nabón, Ecuador.
3. *B. Morleyanus* BR 2: 160; BK 194. Type-locality: Sibambe, Huigra, Ecuador.
4. *B. plagiostoma* (Vaup.) BR 2: 163; BK 196 (syn. of *Binghamia Humboldtii*). Type-locality: San Miguel, Cajamarca, Perú.
5. *B. sepium* (HBK.) BR 2: 160; BK 194. Type-locality: Riobamba, Ecuador.

Hylocereus Britton & Rose

1. *H. calcaratus* (Web.) Britt. & Rose Contr. U. S. Nat. Herb. 12: 428. 1909; BR 2: 193; BK 171. Type-locality: Puerto Limón, Costa Rica.
2. *H. costaricensis* (Web.) Britt. & Rose Contr. U. S. Nat. Herb. 12: 428. 1909; BR 2: 186; BK 172. Type-locality: Costa Rica.
3. **H. monacanthus** (Lem.) BR 2: 190; BK 170. Type-locality: Colombia.
4. *H. Ocamponis* (S.-D.) Britt. & Rose Contr. U. S. Nat. Herb. 12: 429. 1909; BR 2: 184; BK 171. Type-locality: "Mexico or Colombia" *fide* BR, but Backeberg & Knuth say Mexico.
5. **H. polyrhizus** (Web.) BR 2: 185; BK 171. Type-locality: Panamá; Colombia.
6. *H. stenopterus* (Web.) Britt. & Rose Contr. U. S. Nat. Herb. 12: 429. 1909; BR 2: 190; BK 170. Type-locality: Valle de Tuis, Costa Rica.

7. *H. undatus* (Haw.) Britt. & Rose in Britton, Fl. Bermuda 256. 1918; BR 2: 187; BK 170. Type-locality: "China", widespread in cultivation in all warm countries.
8. *H. venezuelensis* BR 2: 186, 226; BK 172. Type-locality: Valencia, Venezuela.

Selenicereus Britton & Rose

1. *S. grandiflorus* (L.) Britt. & Rose Contr. U. S. Nat. Herb. 12: 430 1909; BR 2: 197; BK 165. Type-locality: Jamaica, widespread in cultivation.
2. *S. inermis* (Otto) BR 2: 207; BK 168. Type-locality: La Guayra, Venezuela.
3. *S. Wercklei* (Web.) BR 2: 208; BK 168. Type-locality: Cerro Mogote, Costa Rica.

Mediocactus Britton & Rose

1. *M. megalanthus* (Schum.) BR 2: 212; BK 169. Type-locality: Tarapoto, Perú.

Deamia Britton & Rose

1. **D. Testudo** (Karw.) BR 2: 213; BK 168. Type-locality: Southern Mexico to Colombia.

Weberocereus Britton & Rose

1. *W. Biolley* (Web.) Britt. & Rose Contr. U. S. Nat. Herb. 12: 431. 1909; BR 2: 215; BK 169. Type-locality: Puerto Limón, Costa Rica.
2. *W. panamensis* BR 2: 215; BK 169. Type-locality: Colón, Panamá.
3. *W. Tunilla* (Web.) Britt. & Rose Contr. U. S. Nat. Herb. 12: 432. 1909; BR 2: 214; BK 169. Type-locality: Tablón, s.-w. of Cartago, Costa Rica.

Werckleocereus Britton & Rose

1. *W. Tonduzii* (Web.) Britt. & Rose Contr. U. S. Nat. Herb. 12: 432. 1909; BR 2: 216; BK 169. Type-locality: Santa Maria de Dota, Costa Rica.

Aporocactus Lemaire

1. *A. flagelliformis* (L.) Lem. Ill. Hort. 7: Misc. 68. 1860; BR 2: 218; BK 164. Type-locality: unknown, widely cultivated.

Strophocactus Britton & Rose

1. *S. Wittii* (Schum.) Britt. & Rose Contr. U. S. Nat. Herb. 16: 262. 1913; BR 2: 221; BK 168. Type-locality: near Manaos, Amazonas, Brazil.

Malacocarpus Salm-Dyck

Werdermann believes that the group he called Subgenus *Malacocarpus* (in Monatsschr. Deutsch. Kaktgesell. 4: 5. 1932) has its northern limits, with the exclusion of *M. Vorwerkianus,* between the 7th and the 17th. degrees of latitude South. According to him, here belong *Echinocactus islayensis* Foerst. from Islaya, Peru, *E. aurantiacus* Vaup. from San Pablo, Cajamarca, Peru, and *E. myriacanthus* Vaup., from Chachapoyas, Amazonas, Peru. The last might be included in thist list, and it will be interesting to study all these species together with *Malacocarpus* ssp. or their allies which might be found in Colombia. It is doubtful, however, whether these three Cacti actually are *Malacocarpus*. *Echinocactus islayensis* Foerst. has been included by Britton & Rose in *Malacocarpus* (BR 3: 201), to which Werdermann agrees. Borg, the author of a semipopular book (Cacti 268. 1937), treats it under *Parodia* Speg., and Backeberg raises it to become the type-species of *Islaya* (BK 258), a new monotypic genus. I am inclined to suspect that either Borg or Backeberg may be correct, but I need material for verification. *Echinocactus myriacanthus* is listed by Britton & Rose (BR 3: 101) as *Arequipa myriacantha*, and its position is discussed by Backeberg & Knuth (BK 198) following *Arequipa leucotricha*. *Echinocactus aurantiacus* also could be included in this check-list; however, Britton & Rose consider it to be a doubtful species (BR 3: 102), and Backeberg & Knuth (BK 199) merely discuss it in notes after *Matucana Haynei*. Following his conversion to the genera of Britton & Rose, Werdermann has effected the new combination *Arequipa aurantiaca* (in Kakteenk. 5: 77. 1939), modifying his former opinion as to the position of this species.

Enough transpires in the literature to justify the suspicion that careful critical work should be promptly undertaken to define the generic ties of any species in this vicinity that occurs in Colombia. I have a live sterile plant of *M. Vorwerkianus* under observation, and its gross morphology is so closely similar to that of *M. Sellowii* (Link & Otto) Schum. that I believe it indeed belongs to this genus. Should this plant flower, or collected Colombian material become available, a new study would be necessary.

1. **M. Vorwerkianus** (Werd.) Backeb. BK 253 (illustrated as *Echinocactus Vorwerkianus* by Werdermann, Monatsschr. Deutsch. Kakteengesell. 4: 1. 1932). Type-locality: Sogamoso ("Sagamoso"), apparently in the Department of Boyacá, Colombia.

Frailea Britton & Rose

1. **F. colombiana** (Werd.) Backeb. BK 248 (illustrated as *Echinocactus colombianus* by Werdermann, Monatsschr. Deutsch. Kakteengesell. 4: 2-3. 1932). Type-locality: near Dagua, between Buenaventura and Cali, western Colombia.

Cactus Linnaeus
(*Melocactus* Link & Otto)

1. **C. amoenus** Hoffmanns. Preiss Verz., ed. 7, 22. 1833; BR 3: 232; BK 342. Type-locality: northern coast of Colombia.
2. **C. caesius** (Wendl.) Britt. & Rose Bull. Dept. Agr. Trinidad 19: 86. 1921; BR 3: 233; BK 342. Type-locality: La Guayra, Venezuela.
3. **C. obtusipetalus** (Lem.) BR 3: 232; BK 343. Type-locality: Bogotá, Colombia (Cult.?).

Mammillaria Haworth

The name *Mammillaria* has been variously spelled with one or two *m*'s by well known authors. While it is true, as pointed out by Schumann, that *mamilla* is the correct classical form, nomenclatural botany is not primarily concerned with Latin or Greek amenities. Haworth coined the name *Mammillaria,* which did not exist in Roman times, and gave this name to a genus of Cacti. It may be argued that Haworth should have preferred the form *Mamillaria,* but it is clear that in spelling *Mammillaria* he followed the precedent set by Linnaeus who published *Cactus mammillaris.* Haworth, consequently, was not the victim of a "clear unintentional orthographic error" which could be corrected under the Rules of Nomenclature (Art. 70). Since generic names can be altered only in case of absolute necessity, and even patent errors are tolerated when changes modify the first syllable and letter (see case of *Lespedeza* and *Cespedeza* commented upon in the Amsterdam edition of the Rules, 1935), *Mammillaria* stands, for this is the way Haworth wrote it being followed by numerous later authors. The issue in conclusion is not so much one of phylology and classical use as one of nomenclature, and can be finally solved only *as nomenclature*. For further comments on the proper spelling of *Mammillaria* see Croizat in Desert Plant Life 15: 75-76. July 8, 1943.

About a century ago, Salm-Dyck published *Mammillaria columbiana* (Cact. Hort. Dyck. 99. 1850) of which he gives the following description: "M. caule cylindraceo simplice axillis lanatis, mamillis confertis subovato-conicis albido-punctatis, pulvillis junioribus lanigeris senioribus brunneo-tomentosis, aculeis exterioribus 18-20 setaceis radiantibus albidis, centralibus 4-5 subaequalibus erecto-patentibus rigidis aureis, ima basi noduloso-incrassatis. (Nob.). Praeter patriam diversam recedit haec species a *M. eriacantha* caule graciliore, mamillis crassioribus, aculeis exterioribus validioribus, centralibus 4 vel 5 glabris, nec sub lente pubescentibus". On the assumption — now disproved — that *Mammillaria* could not be collected in Colombia, Britton & Rose (Cact. 4: 127. 1923) and other authors have treated *M. columbiana* as a synonym of *M. eriacantha* Link & Otto of Mexico. Further study will decide what is to be done with Salm-Dyck's binomial, but it cannot now be treated as it was by Britton & Rose.

1. **M. bogotensis** Werd. in Backeb. Neue Kakt. 98. 1931 and (as "sp. nov.") Fedde Repert. 30: 65. 1932 (figured in Monatsschr. Deutsch. Kakteengesell. 4:5. 1932); BK 393. Type-locality: southern East Cordillera, mountains of the Rio Meta at ca. 2700 m. alt.
2. **M. columbiana** S.-D. Cact. Hort. Dyck 99. 1850. See notes under the genus. This, not *colombiana*, is the correct spelling. In this list, the original names and epithets are maintained even when they happen to be erroneously written.
3. *M. Hennisii* Boed. Monatsschr. Deutsch. Kakteengesel. 4: 7 fig. 1932; BK 393. Type-locality: North-Western Venezuela, ca. 500 m. alt.

4. *M. mammillaris* (L.) Karst. Deutsch. Fl. 888; BR 4: 70; BK 397. Type-locality: Tropical America, reported from Venezuela.

Epiphyllum Haworth

1. *E. cartagense* (Web.) Britt. & Rose Contr. U. S. Nat. Herb. 16: 256. 1913; BR 4: 197; BK 163. Type-locality: Cartago, Costa Rica.
2. *E. grandilobum* (Web.) Britt. & Rose Contr. U. S. Nat. Herb. 16: 257. 1913; BR 4: 192; BK 162. Type-locality: La Hondura, Costa Rica.
3. *E. Hookeri* Haw. Phil. Mag. 6: 108. 1829; BR 4: 197; BK 163. Type-locality: Brazil in error, but known in northern Venezuela.
4. *E. lepidocarpum* (Web.) Britt. & Rose Contr. U. S. Nat. Herb. 16: 257. 1913; BR 4: 194; BK 163. Type-locality: Cartago, Costa Rica.
5. *E. macropterum* (Lem.) BR 4: 193; BK 162. Type-locality: not stated, known from Costa Rica.
6. *E. oxypetalum* (DC.) Haw. Phil. Mag. 6: 109. 1829; BR 4: 188; BK 161. Type:locality: from Mexico to Brazil, including Venezuela.
7. *E. phyllanthus* (L.) Haw. Syn. Pl. Succ. 197. 1812; BR 4: 187; BK 161. Type-locality: Brazil, but known from Panama to Paraguay.
8. *E. Pittieri* (Web.) Britt. & Rose Contr. U. S. Nat. Herb. 16: 258. 1913; BR 4: 194; BK 163. Type-locality: Costa Rica.
9. *E. strictum* (Lem.) Britt. & Rose Contr. U. S. Nat. Herb. 16: 259. 1913; BR 4: 196; BK 163. Type-locality: South Mexico to Panama (*fide* BR); Honduras, Guatemala (*fide* BK).

Eccremocactus Britton & Rose

1. *E. Bradei* Britt. & Rose Contr. U. S. Nat. Herb. 16: 262. 1913; BR 4: 204; BK 163. Type-locality: near Orotina, Costa Rica.

Nopalxochia Britton & Rose

1. **N. phyllanthoides** (DC.) BR 4: 205; BK 161. Type-locality: "Mexico or Colombia" (fide BR).

Wittia Schumann

1. **W. amazonica** Schum. Monatsschr. Kakteenk. 13: 117. 1903; BR 4: 206; BK 160. Type-locality: near Leticia and Tarapoto, Loreto, Perú (*).

(*) The town of Leticia on the Amazon River, in territory formerly disputed between Colombia and Peru, is now under the full sovereignty of Colombia.

2. *W. panamensis* Britt. & Rose Contr. U. S. Nat. Herb. 16: 241. 1913; BR 4: 207; BK 160. Type-locality: Chepo, Panama, ranging into Venezuela and therefore occurring probably also in Colombia.

Pseudorhipsalis Britton & Rose

1. *P. himantoclada* (Rol.-Goss.) BR 4: 213; BK 157. Type-locality: Pozo Azul, Costa Rica.

Rhipsalis Gaertner
Nom. Gen. Conserv.

1. **R. cassutha** Gaertn. Fruct. Sem. 1: 137. 1788; BR 4: 225; BK 149. Type-locality: unknown, but ranging from Florida to Ceylon through warmer America and Africa.
2. *R. coriacea* Polakow. Linnaea 41: 562. 1887; BR 241; BK 151. Type-locality: near Cartago, Costa Rica.
3. *R. leiophloea* Vaup. Zeitschr. Sukkulentenk. 1: 20. 1923; BK 151. Type-locality: unknown, Tropical America.
4. *R. micrantha* (HBK.) DC. Prodr. 3: 476. 1828; BR 4: 239; BK 151. Type-locality: Olleros, northern Peru.
5. *R. Pittieri* BR 4: 233; BK? (omitted). Type-locality: Puerto Cabello, Venezuela.
6. *R. ramulosa* (S.-D.) Pfeiff. En. Cact. 130. 1837; BR 4: 240; BK 153. Type-locality: unknown, but western Brazil according to Vaupel; Costa Rica according to Backeberg & Knuth.
7. **R. Roseana** Berg. Zeitschr. Sukkulentenk. 1: 22. 1923; BR 246; BK? (omitted). Type-locality: unknown, but Tolima and vicinity of Popayán, Cauca, Colombia, according to Britton & Rose.
8. *R. Simmleri* Beauv. Bull. Herb. Boiss., ser. 2, 7: 136. 1907; BR 4: 223; BK? (omitted). Type-locality: Costa Rica.
9. *R. sulcata* Web. Dict. Hort. Bois 1046. 1898; BR 4: 236; BK 151. Type-locality: not known, possibly Tropical South America.
10. *R. Tonduzii* Web. Dict. Hort. Bois 1046. 1898; BR 4: 239; BK 151 Type-locality: Costa Rica.
11. *R. Wercklei* Berg. Monatsschr. Kakteenk. 16: 64. 1906; BR 4: 240; BK 153. Type-locality: Navarro, Costa Rica.